

Claims

What is claimed is:

1. An apparatus for recording usage of a gas supply apparatus comprising:
a device adapted to be connected to the gas supply apparatus controller, said device operable to monitor gas usage data; and
at least one data storage device connected to said gas usage monitor, said storage device operable to store said gas usage data.
2. The apparatus according to claim 1 wherein said gas usage monitor includes a microprocessor and further wherein said data storage device includes at least one electrically erasable programmable read-only memory chip.
3. The apparatus according to claim 2 wherein said gas usage data includes the number of operations of the gas supply apparatus during a predetermined time period and the duration of one said operations during said predetermined time period.
4. The apparatus according to claim 3 further including a data interface connected to said microprocessor, said data interface adapted to be connected to a personal computer and operative to download the data stored in said electrically erasable programmable read-only memory chip to said personal computer.
5. The apparatus according to claim 4 wherein said data personal computer is also operative to erase said electrically erasable programmable read-only memory chip as the data is downloaded.

6. The apparatus according to claim 5 wherein said microprocessor includes a sleep mode such that said microprocessor is only active during data collection, said sleep mode being interrupted upon the gas supply apparatus user drawing a breath.

7. The apparatus according to claim 5 wherein said data storage device includes a plurality of electrically erasable programmable read-only memory chips and said electrically erasable programmable read-only memory chips are connected to said microprocessor with a serial data bus.

8. The apparatus according to claim 5 wherein said microprocessor is a data microprocessor and further wherein the gas supply apparatus includes a control microprocessor that is connected to a solenoid valve that is operative to control the supply of gas from the apparatus to a user, said control microprocessor also being connected to said solenoid valve to receive operating data.

9. The apparatus according to claim 5 wherein said microprocessor is also connected to a solenoid valve and operable to control the supply of gas from the apparatus to a user.

10. The apparatus according to claim 7 wherein said microprocessor is responsive to a low voltage condition to cease operation whereby battery life is extended.

11. The apparatus according to claim 5 wherein said data includes the number of breaths taken by user during a predetermined time period and an average breath duration for said time period.

12. The apparatus according to claim 11 wherein said predetermined time period is one minute.

13. The apparatus according to claim 11 wherein the duration of the last breath during said predetermined time period is used as said average breath duration.

14. The apparatus according to claim 4 wherein said gas supply includes a cylinder of pressurized oxygen.

15. The apparatus according to claim 4 wherein said gas supply includes a liquid oxygen reservoir.

16. A method for monitoring the usage of a gas supply apparatus comprising the steps of:

(a) providing a device adapted to be connected to the gas supply apparatus controller, the device operable to monitor gas usage data and at least one storage device connected to said gas usage monitor, the storage device operable to store the gas usage data;

(b) monitoring the usage of the pressurized gas supply apparatus controller;

(c) periodically downloading the data to an external personal computer; and

(d) erasing the storage device.

17. The method according to claim 16 wherein step (b) is discontinued following the elapse of a predetermined time period.

18. The method according to claim 16 wherein said gas usage monitor enters a sleep mode between user breaths.

19. The method according to claim 16 wherein the data includes the number of breaths taken by a user during a predetermined time period and an average breath duration for said time period.

20. The method according to claim 16 wherein the gas supply provided in step (a) includes a cylinder of pressurized oxygen.